174792

ENVIRON

0000093

September 19, 2002

Shari L. Kolak
USEPA Region 5 (SR-6J)
77 West Jackson Boulevard
Chicago, IL 60604-3507

Subject: Comments on the Evaluation of Potential Exposures to Former Impoundment and Floodplain Soils in the January 2002 *Final (Revised) Human Health Risk Assessment, Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site*, prepared for the Michigan Department of Environmental Quality, Environmental Response Division

Dear Ms. Kolak:

At the request of the Kalamazoo River Study Group (KRSG), I have reviewed the January 2002 *Final (Revised) Human Health Risk Assessment, Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site* (the "HHRA"), prepared for the Michigan Department of Environmental Quality, Environmental Response Division (MDEQ-ERD). This letter summarizes my comments on the HHRA evaluation of potential exposures to former impoundment and floodplain soils. This letter is not intended as a comprehensive review of the entire HHRA, which was previously reviewed by Cambridge Environmental, Inc.

Overall, I have concluded that the HHRA relies on screening level approaches in evaluating exposures to the former impoundment and floodplain soils, and that these approaches are not appropriate for a baseline risk assessment. As a result, the HHRA substantially overstates potential exposures and risks associated with PCBs in soils in the vicinity of the former Plainwell, Otsego, and Trowbridge dams.

My review of the HHRA assessment of former impoundment and floodplain soils is summarized below.

Data Evaluation

In the HHRA, current and potential future exposures to PCBs in soil are based on data from samples collected in the vicinity of the former Plainwell, Otsego, and Trowbridge dams. These soils are referred to collectively as "floodplain soils" in the HHRA. Potential risks are evaluated in the HHRA based on maximum and arithmetic mean concentrations measured in the "floodplain soils".

214 Carnegie Center • Princeton, New Jersey 08540-6284 • USA • Tel: (609) 452-9000 • Fax: (609) 452-0284 • www.environcorp.com

Based on my review, the HHRA does not evaluate the soil data in a manner that is consistent with EPA risk assessment guidance, or that provides a reasonable basis for estimating potential exposures at the Site. Specifically:

1) The HHRA does not differentiate between soil samples collected within the former impoundments, and samples collected outside those impoundments. The soil samples classified as "floodplain soils" in the HHRA were actually collected from two distinct areas:

   - "Former impoundment soils", collected from within the former impoundments. These soils consist of sediments previously overlain by river water before the dams were removed.
   - "Historical floodplain soils", collected from outside the former impoundments. These soils were affected by flooding events, either before or after removal of the dams.

   Within each of the three impoundments areas (i.e., Plainwell, Otsego, and Trowbridge), the HHRA combines the historical floodplain and former impoundment sample results in evaluating potential exposures to soils. This approach is not appropriate in estimating human health risks at the Site, because these two types of soils have different characteristics that effect exposure potential. For example, concentrations of PCBs are generally lower (e.g., averaging less than 2 mg/kg) in the historical floodplain soils, and higher in the former impoundment soils. The former impoundment soils, on the other hand, are generally more remote from area where people live or work. These important differences should be considered in the HHRA, and their impact on potential human health risks evaluated.

2) The HHRA does not follow EPA risk assessment guidance in determining exposure point concentrations in soil. Within each impoundment area, the HHRA estimates potential exposures based on maximum and mean concentrations in soil, "to reflect a range of exposure point concentrations" (Section 3.5.3). Contrary to EPA risk assessment guidance, the HHRA does not determine the distribution of data across defined exposure areas to develop conservative estimates of the mean PCB concentrations, such as 95% upper confidence on the mean (UCL) values, to serve as exposure point concentrations.

Standard risk assessment practice requires a careful evaluation of the data used to estimate potential exposures. For example, according to EPA's *Risk Assessment Guidance for Superfund – Volume I, Human Health Evaluation Manual (Part A)* (EPA 1989), "In evaluating monitoring data for the assessment of soil contact exposures, the spatial distribution of the data is a critical factor". However, as discussed above, the HHRA does not consider the spatial distribution of the "floodplain soil" data, including differences between historical floodplain and former impoundment soils, or the effect that the data distribution may have on potential exposures and risks.

Exposure Assessment

The HHRA evaluates two populations that may be exposed to PCBs in "floodplain soils":

- "Nearby Residents", who live in the vicinity of the Site.
- "Recreationalists", who periodically visit the Site to fish, hunt, or engage in other outdoor activities.

There are no homes currently located on "floodplain soils", and future land use is restricted within the 100-year floodplain of the Kalamazoo River. Thus, the HHRA concludes that residential development of the "floodplain soils" is not an appropriate current or future scenario. Instead, the HHRA evaluates nearby residents, who live in areas adjacent to the "floodplain soils". However, in evaluating the nearby resident scenario, the HHRA uses exposure assumptions that are virtually identical to EPA's conservative defaults for a standard "residential" scenario. For example, the HHRA assumes that 100% of the soil ingested by nearby residents each day is "floodplain soil", for 350 days per year, for up to 30 years. In fact, the HHRA even assumes that 100% of the soil ingested each day by small children (age 1 through 6) is "floodplain soil", under the nearby resident scenario. The exposure assumptions used in the HHRA under the nearby resident scenario are especially inappropriate for the former impoundment soils, the vast majority of which are remote from residential areas.

The HHRA assumes that the "recreationalist" will be exposed to "floodplain" soils for 128 days per year, for up to 24 years, from age 6 through 31 (see Table 3-5). The HHRA indicates that this exposure frequency is site-specific, and based on the proximity of recreational and residential areas to the Site. However, the HHRA does not present any data supporting the estimated exposure frequency. In fact, available information suggests that the frequency of contact with "floodplain soils" by recreational visitors is likely to be significantly lower. For example, data presented in *A Survey of Anglers Residing Near the Kalamazoo River Basin* (Atkin, 1994) indicate that the average frequency of fishing along the Kalamazoo River is only approximately 20 to 25 days per year, for active anglers.

I appreciate the opportunity to submit these comments. If you have any questions, please feel free to contact me at your convenience.

Sincerely,

Stephen T. Washburn
Principal

STW:pas
02-8786A:PRIN_WP/16987v1.doc

cc: J. M. Clark, USEPA Region 5
B. Barnett, Drinker Biddle & Reath